

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A circuit designing apparatus comprising:
 - a logic verification unit configured to perform a logic verification by ~~using~~ inputting a plurality of test vectors to a circuit description defining a structure and a specification of a circuit to be designed and comparing an output signal and an expected value of the output signal ~~a plurality of test vectors~~;
 - a profile information generating unit configured to store information about a plurality of logic cones in the circuit description to be activated by the test vectors during the logic verification in every test vector as ~~[[a]]~~ profile information;
 - a circuit changing unit configured to change the circuit description after the logic verification and to generate a changed circuit description;
 - a logic cone specifying unit configured to specify changed logic cones of a ~~the~~ changed circuit description ~~automatically~~ based on a result of a formal verification; and
 - a test vector classifying unit configured to classify the test vectors into test vectors related to the changed logic cones and test vectors unrelated to the changed logic cones ~~[[by]]~~ using the profile information,
 - wherein the logic verification unit performs a logic verification of the changed circuit description using the test vectors related to the changed logic cones.

2. (Currently amended) The circuit designing apparatus of claim 1, further comprising:

a logic cone dividing unit configured to divide the circuit description into the logic cones;

~~a circuit changing unit configured to change the circuit description and to generate a changed circuit description; and~~

a formal verification unit configured to verify logic by formal technology using the circuit description and the changed circuit description.

3. (Currently amended) A circuit designing method comprising:

performing a logic verification by using inputting a plurality of test vectors to a circuit description defining a structure and a specification of a circuit to be designed and comparing an output signal and an expected value of the output signal a plurality of test vectors;

storing information about a plurality of logic cones in the circuit description to be activated by the test vectors during the logic verification in every test vector as profile information;

changing the circuit description after the logic verification;

generating a changed circuit description;

specifying changed logic cones of a the changed circuit description automatically based on a result of a formal verification; and

classifying the test vectors into test vectors related to the changed logic cones and test vectors unrelated to the changed logic cones [[by]] using the profile information; and

performing a logic verification of the changed circuit description using the test vectors related to the changed logic cones.

4. (Currently amended) The circuit designing method of claim 3, further comprising:
- dividing the circuit description into the logic cones;
- ~~changing the circuit description and generating the changed circuit description;~~ and
- verifying logic by formal technology using the circuit description and the changed circuit description.
5. (Previously presented) The circuit designing method of claim 3, wherein the logic verification of the changed circuit description is executed by using preferentially the test vectors relating to the changed logic cones.
6. (Previously presented) The circuit designing method of claim 4, further comprising issuing a circuit description and processing circuit manufacture by using the circuit description.
7. (Previously presented) The circuit designing method of claim 5, further comprising issuing a circuit description and processing circuit design and manufacture by using the circuit description.

8. (Currently amended) A computer-readable recording medium storing a circuit designing program comprising and making a computer execute:

instructions configured to perform a logic verification by ~~using~~ inputting a plurality of test vectors into a circuit description defining a structure and a specification of a circuit to be designed and comparing an output signal and an expected value of the output signal ~~a plurality of test vectors;~~

instructions configured to store information about a plurality of logic cones in the circuit description to be activated by the test vectors during the logic verification in every test vector as profile information;

instructions configured to change the circuit description after the logic verification and to generate a changed circuit description;

instructions configured to specify changed logic cones of a the changed circuit description ~~automatically based on a result of a formal verification; and~~

instructions configured to classify the test vectors into test vectors related to logic cones the changed and test vectors unrelated to the changed logic cones ~~[[by]]~~ using the profile information; and

instructions configured to perform a logic verification of the changed circuit description using the test vectors related to the changed logic cones.

9. (Previously presented) The computer-readable recording medium storing a circuit designing program of claim 8, wherein the logic verification of the changed circuit description is executed by using preferentially the test vectors relating to the changed logic cones.

10. (Previously presented) The computer-readable recording medium storing a circuit designing program of claim 8, further comprising and making the computer execute:
instructions configured to output a circuit description,
wherein circuit manufacture is processed by using the circuit description.

11. (Currently amended) The computer-readable recording medium storing a circuit designing program of claim 8, further comprising and making the computer execute:
instructions configured to divide the circuit description into the logic cones;
~~instructions configured to change the circuit description and for generating the changed circuit description; and~~
instructions configured to verify by formal technology using the circuit description and the changed circuit description.

12. (Previously presented) The circuit designing apparatus of claim 1, wherein the logic verification of the changed circuit description is executed by using preferentially the test vectors relating to the changed logic cones.

13. (Previously presented) The circuit designing apparatus of claim 1, wherein the second and subsequent logic verifications are executed by using only the test vectors relating to the changed logic cones.

14. (Previously presented) The circuit designing apparatus of claim 2, wherein the logic cone specifying unit specifies the changed logic cones on the basis of a result of the formal verification.

15. (Previously presented) The circuit designing method of claim 3, wherein the second and subsequent logic verifications are executed by using only the test vectors relating to the changed logic cones.

16. (Previously presented) The computer-readable recording medium storing a circuit designing program of claim 8, wherein the second and subsequent logic verifications are executed by using only the test vectors relating to the changed logic cones.